

## REMARKS

The Office Action dated 21 December 2001 has been fully considered. Claims 1-18, and 21 have been amended. No new matter has been added. Claims 1-21 are pending in this patent application. Reconsideration of the claims is respectfully requested.

In paragraph 1 on page 2 of the Office Action, claim 9 is rejected under 35 U.S.C. §102 (e) as being anticipated by U.S. Patent 6,219,538 issued to Kaminsky et al. (hereinafter Kaminsky).

The Applicant respectfully traverses the rejection for the following reasons.

Applicant's claim 9 sets forth, among other steps, a method for registration of a terminal to a telecommunication network. The method comprises associating an identification (e.g. TMSI) for the terminal, deriving a signature for the identification (e.g. TMSI\_SIG), and allocating a pair consisting of the identification and the signature to the terminal.

Applicant's claimed invention provides the derivation of a signature (e.g. TMSI\_SIG) by the telecommunication network controlling device, or MSC, for the terminal. The derivation is performed solely on the basis of the associated identity (e.g. TMSI) of the terminal by the MSC. The TMSI and the TMSI\_SIG of the terminal being established as a pair of data items as parameters for identifying a specific mobile station by the telecommunications network for attach and detach operations. See page 9 line 22 to page 10 line 14.

Kaminsky, on the other hand, teaches a method of signature that is based solely on the Radio Frequency (RF) components of the transmitting mobile terminals.

The RF signature of Kaminsky is taught to be an unintentional modulation that is unique to the specific cellular phone. Preferably, phase or frequency type characteristics are employed because of their reduced susceptibility to cellular environments. (Col. 6, lines 58-67).

Further, Kaminsky must convert the RF signature to produce a digital RF signature descriptor data stream for comparison to a database of RF signatures. Two methods taught by Kaminsky for comparison validation are negative and positive validation. For negative validation, the RF signatures are compared with known fraudulent cellular phones and for positive validation, the RF signatures are compared with known non-fraudulent cellular phones. Either way, Kaminsky teaches a comparison of the digital RF signature descriptor data stream to a plurality of RF signatures for validation, which is in contrast to Applicant's claimed invention.

Applicant's claimed invention, therefore, is different from Kaminsky because Kaminsky requires that the RF spectrum first be converted to a digital RF signature descriptor data stream, whereas Applicant's claimed invention seeks to derive the signature based solely on the identity of the mobile terminal and does not require conversion from one form to another.

Furthermore, once derived, the signature and identity of the mobile terminal of Applicant's claimed invention are paired to produce a validation parameter for attach and detach operations as discussed above. Kaminsky, on the other hand, must compare the converted digital RF signature descriptor data stream to a database of known fraudulent or non-fraudulent signatures to determine validity. Applicant's claimed invention is, therefore, different than Kaminsky because Kaminsky requires

multiple comparisons of fraudulent and non-fraudulent signatures to determine validity, whereas the present invention requires only a single comparison between the received TMSI/TMSI\_SIG pair to the stored TMSI/TMSI\_SIG pair to determine validity.

Applicant submits, therefore, that claim 9 patentably distinguishes over Kaminsky and is in condition for allowance.

In paragraph 2 on page 2 of the Office Action, claims 1-6, and 19-21 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kaminsky in view of U.S. Patent 6,208,628 issued to Monrad et al. (hereinafter Monrad).

The Applicant respectfully traverses the rejection for the following reasons.

Applicant's claim 1 sets forth, among other steps, a method for performing a detach of a terminal registered to a telecommunication network by associating an identification for the terminal, deriving a signature for the identification, and allocating a pair consisting of the identification and the signature to the terminal. The method comprises sending a detach request including the identification and the identification signature from the registered terminal to said network, receiving the detach request at the network side, comparing the received detach request with a record of registration data of the terminal kept at the network side, and detaching the terminal from the network, if the received detach request coincides with the record of registration data.

Kaminsky, on the other hand, does not teach or fairly suggest a detach operation that requires the comparison of a received identification and signature pair for validation prior to the successful detach operation. Rather, Kaminsky merely teaches a method of signaling a call termination from the mobile terminal to the cell site using a call termination signal. The call termination signal generator 42 being

effective to instruct the cell site equipment 34 that the mobile user has "hung up" , so that the cell site equipment 34 also hangs up with no identification validation. (Col. 5 lines 9-41).

Monrad fails to remedy the deficiencies of Kaminsky because Monrad discloses the use of only a single identification of the mobile terminal. The single identification, ILSI, is generated as a new identity from the old TLLI and RA identifiers. Monrad further discloses that the single identifier, ILSI, is used in the attach sequence, but fails to teach or fairly suggest its use in a detach sequence.

Applicant's claimed invention, therefore, is different than Kaminsky and Monrad, taken alone or in combination, because Applicant's claimed invention sets forth the use of both an identifier and a signature for authentication of the mobile terminal during a detach request, whereas Kaminsky and Monrad simply fail to show any form of authentication during a detach request. Not only is authentication during detach request missing from both Kaminsky and Monrad, but authentication using an identifier/signature pair is also missing. Applicant submits, therefore, that claim 1 patentably distinguishes over the combination of Kaminsky and Monrad and is condition for allowance.

Claims 19-21 set forth apparatus to implement the method of claim 1. Since claim 1 patentably distinguishes over Kaminsky and Monrad, claims 19-21 also patentably distinguish over Kaminsky and Monrad for at least the same reasons given above and are in condition for allowance.

Dependent claims 2-6, which are dependent from independent claim 1, are also rejected under 35 U.S.C. §103(a) as being unpatentable over the combination of

Kaminsky and Monrad. While Applicant does not acquiesce with any particular rejections to these dependent claims, it is believed that these rejections are now moot in view of the remarks made in connection with independent claim 1. These dependent claims include all of the limitations of the base claim and any intervening claims, and recite additional features which further distinguish these claims from the cited references. Therefore, dependent claims 2-6 are also allowable over the combination of Kaminsky and Monrad.

In paragraph 3 on page 3 of the Office Action, claims 7-8, and 10-18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kaminsky in view of Monrad and further in view of U.S. Patent 5,765,101 issued to Kuriki.

Similarly to Kaminsky and Monrad, Kuriki fails to teach the use of an identification/signature pair used during both the registration of a mobile terminal and detachment of the mobile terminal from the telecommunication network, which is in contrast to Applicant's claimed invention.

Rather, Kuriki teaches the use of the well known identifiers IMEI and IMSI, which are identifiers that identify the mobile equipment and the mobile subscriber, respectively. The IMEI and IMSI identities, however, are fixed identities that are assigned to the particular mobile equipment and SIM card in use by the mobile user. (Col. 2 line 60 to col. 3 line 10). The combination of IMEI and IMSI are then transmitted to the communication concern's system for validation during call origination and call termination requests.

It can be seen, therefore, that the IMEI or IMSI identity of Kuriki is not derived, which is in direct contrast to Applicant's claimed invention. As discussed above, the

signature of Applicant's claimed invention is derived from the identity of the mobile terminal by the telecommunication network to form an identification pair, which is then used for registration and detachment purposes. Applicant submits that the combination of Kaminsky, Monrad, and Kuriki fail to teach or fairly suggest Applicant's claimed invention as set forth in independent claims 1 and 9, rendering claims 1 and 9 patentably distinguishable over Kaminsky, Monrad, and Kuriki. Since claims 7-8 and 10-18 depend from claims 1 and 9, respectively, claims 7-8 and 10-18 also patentably distinguish over the combination of Kaminsky, Monrad, and Kuriki and are in condition for allowance.

### **CONCLUSION**

In view of the amendments and reasons provided above, it is believed that all pending claims are in condition for allowance. The amendments clarify the patentable invention without adding new subject matter. Applicant respectfully requests favorable reconsideration and early allowance of all pending claims.

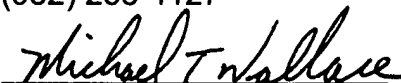
If a telephone conference would be helpful in resolving any issues concerning this communication, please contact Attorney for Applicant, David W. Lynch, at 952-253-4104.

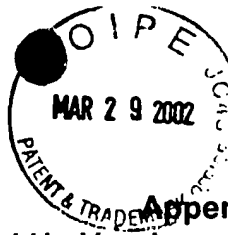
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**Appendix A**  
**Marked Up Version of the Entire Claim Set**

1           1.       (Amended) A method for performing a detach of a terminal [ (MS) ]  
2 registered to a telecommunication network [ (NW) ] by associating an identification  
3 [ (TMSI) ] for said terminal [ (MS) ], deriving a signature [ (TMSI\_SIG) ] for said  
4 identification [ (TMSI) ], and allocating a pair consisting of said identification [ (TMSI) ]  
5 and said signature [ (TMSI\_SIG) ] to said terminal [ (MS) ], said method comprising the  
6 steps of:

7           sending a detach request [ (DET\_REQ) ] including said identification [ (TMSI) ]  
8 and said identification signature [ (TMSI\_SIG) ] from said registered terminal [ (MS) ] to  
9 said network [ (NW) ];

10          receiving said detach request [ (DET\_REQ) ] at the network [ (NW) ] side;

11          comparing said received detach request [ (DET\_REQ) ] with a record of  
12 registration data of said terminal [ (MS) ] kept at the network side; and

13          detaching said terminal [ (MS) ] from said network [ (NW) ], if said received  
14 detach request [ (DET\_REQ) ] coincides with said record of registration data.

1           2.       (Amended) [ A ] The method according to claim 1, wherein sending of  
2 said detach request message [ (DET\_REQ) ] is initiated upon detection of a  
3 predetermined state of said terminal [ (MS) ].

1           3.       (Amended) [ A ] The method according to claim 2, wherein said  
2 predetermined state is a power off state.

1           4.     (Amended) [ A ] The method according to claim 2, wherein said  
2 predetermined state is a low battery state.

1           5.     (Amended) [ A ] The method according to claim 2, wherein said  
2 predetermined state resides in a removal of a SIM module from said terminal.

1           6.     (Amended) [ A ] The method according to claim 1, wherein said record  
2 of registration data contains said pair consisting of said identification [ (TMSI) ] and  
3 said identification signature [ (TMSI\_SIG) ], and said comparison is effected for each  
4 of said data items forming said pair.

1           7.     (Amended) [ A ] The method according to claim 1, wherein said  
2 identification [ (TMSI) ] is the temporary mobile subscriber identity.

1           8.     (Amended) [ A ] The method according to claim 1, wherein said  
2 identification is the international mobile subscriber identity [ IMSI ].

1           9.     (Amended) A method for registration of a terminal [ (MS) ] to a  
2 telecommunication network [ (NW) ], said method comprising the steps of:  
3         associating an identification [ (TMSI) ] for said terminal [ (MS), ];  
4         deriving a signature [ (TMSI\_SIG) ] for said identification [ (TMSI), ]; and  
5         allocating a pair consisting of said identification [ (TMSI) ] and said signature  
6 [ (TMSI\_SIG) ] to said terminal [ (MS) ].



1           10.   (Amended) [ A ] The method according to claim 9, further comprising  
2 the step of sending a registration request [ (REG\_REQ) ] from said terminal [ (MS) ] to  
3 said network [ (NW) ; ] and wherein said associating is effected in response to the  
4 receipt of said registration request.

1           11.   (Amended) [ A ] The method according to claim 10, wherein said  
2 registration request [ (REG\_REQ) ] is an attach request for initial registration of said  
3 terminal [ (MS) ] in said network [ (NW) ].

1           12.   (Amended) [ A ] The method according to claim 10, wherein said  
2 registration request [ (REG\_REQ) ] is a location update request for updating a  
3 previous registration of said terminal [ (MS) ] in said network [ (NW) ].

1           13.   (Amended) [ A ] The method according to claim 10, wherein said  
2 registration request [ (REG\_REQ) ] is a cell update request for updating a previous  
3 registration of said terminal [ (MS) ] in said network [ (NW) ].

1           14.   (Amended) [ A ] The method according to claim 10, wherein said  
2 registration request [ (REG\_REQ) ] is a URA update request for updating a previous  
3 registration of said terminal [ (MS) ] in said network [ (NW) ].

1           15.    (Amended) [ A ] The method according to claim 9, wherein said  
2 associating of said identification [ (TMSI) ] is arbitrary.

1           16.    (Amended) [ A ] The method according to claim 9, wherein said  
2 allocating is effected in a secure mode.

1           17.    (Amended) [ A ] The method according to claim 9, wherein said  
2 identification [ (TMSI) ] is the temporary mobile subscriber identity.

1           18.    (Amended) [ A ] The method according to claim 9, wherein said  
2 identification is the international mobile subscriber identity [ IMSI ].

1           19.    (Unchanged) A terminal device adapted to the method according to claim  
2 1.

1           20.    (Unchanged) A network controlling device adapted to the method  
2 according to claim 1.

1           21.    (Amended Twice) A telecommunication system consisting of at least one  
2 terminal [ (MS) ] and at least one network controlling device controlling at least one  
3 radio transceiver device, adapted to carry out the method according to claim 1.